

Wednesday, June 04, 2014 2:56:08 PM

Page 1

Setup Start *NS1*

Stop *NS2*

Customer:

?

2

Reference:

Run Start *NR1*

Stop ***NR2***

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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|--|--|--|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
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| Training | | | | | | | | | |
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FAULT CATEGORY

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|--|--|---|--|

Work Order ID 120114

120114

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Wednesday, June 04, 2014 2:56:08 PM

Item ID: D3304-044 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Tube Assembly

Start Date: 6/04/14 Start Qty: 2.00 *2*

Required Date: 6/04/14 Req'd Qty: 2.00 *2*

Reference: Cust Item ID: Customer:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*

QC: Date: SPC (Y/N): Date: Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|---------------------|----------------------------|
| 190 | Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 | 0.00 | | | | | | | |
| *190* | <i>m 128564.</i> | | | | | <i>2</i> | <i>0</i> | <i>14-10-7</i> | <i>DAS 34 9-89</i> |
| Powdercoat | Memo | 0.00 | | | | | | | |
| Powder Coating | START TIME: <i>1:20</i> OVEN TEMPERATURE: | | | | | | | | |
| | <i>320</i> FINISH TIME: <i>1:58</i> | | | | | | | | |
| 200 | QC3- Inspect Part Finish | 0.00 | | | | | | | |
| *200* | | | | | | | | | <i>DAS 38 9-89 14-10-7</i> |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 210 | | 0.00 | | | | | | | |
| *210* | Small Fab | | | | | <i>2</i> | <i>FF</i> | <i>OCT - 8 2014</i> | |
| Small Fab | Memo | 0.00 | | | | | | | |
| Small Fab | Assemble lanyard and pip pin as per Dwg D3304Identify as D3304-044 | | | | | | | | |

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14/10/10

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| | | | |
|--|--|---|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |
|--|--|---|--|

Picklist Print

Wednesday, June 04, 2014 2:56:07 PM

Page 1

Work Order ID: 120114

120114

Parent Item: D3304-044

D3304-044

Parent Item Name: Tube Assembly

Start Date: 6/04/14

Required Date: 6/04/14

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP: D 04.11.26 Revised Steps 7 KJ/JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| BLBS-0016 | | Purchased | No | | | 210 | Each | 25.0000 | 1 | 2 | | | |
| *RI RS-0016* | | | | | | | | | ** | | FF | OCT - 8 2014 | |
| PIP PIN | | | | | | | | | | | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| ST282 | 25 | |
| 122405 | 3 | |
| 122869 | 10 | |
| 123507 | 12 | |

| | | | | | | | | | | | | | |
|--------------------|--|-----------|----|--|--|-----|---|----------|-----------|---|----|--------------|--|
| CBL-1240 | | Purchased | No | | | 100 | f | 402.4000 | 1.0416 | 3 | | | |
| *CRI -1240* | | | | | | | | | ** | | FF | OCT - 8 2014 | |
| Cable | | | | | | | | | | | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| GA | 402.4 | |
| m128229 | 402.4 | |

| | | | | | | | | | | | | | |
|-------------------|--|-----------|----|--|--|-----|------|----------|-----------|---|----|--------------|--|
| CBL-460 | | Purchased | No | | | 210 | Each | 318.0000 | 2 | 4 | | | |
| *CRI -460* | | | | | | | | | ** | | FF | OCT - 8 2014 | |
| Loop Sleeve | | | | | | | | | | | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| GA | 129753 | |
| 125499 | 5 | |
| m127811 | 3 | |
| m128229 | 5 | |
| m129007 | 105 | |
| m129347 | 200 | |

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

| | | | | | | | | | | | | | | | | | | |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/> | AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | |
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | |

| Root Cause | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design | | | | | | | | | |
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Handling/Pre | | | | | | | | | |
| Material | | | | | | | | | |
| Operator | | | | | | | | | |
| Offset/Setup | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Transport | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| | | |
|--|--|---|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence |
| | | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge |
| | | <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |

Picklist Print

Wednesday, June 04, 2014 2:56:08 PM

Page 2

Work Order ID: 120114

120114

Parent Item: D3304-044

D3304-044

Parent Item Name: Tube Assembly

Start Date: 6/04/14

Required Date: 6/04/14

Start Qty: 2.00

Required Qty: 2.00

D3304-8 Manufactured No

210 Each 33.0000 1 2

D3304-8

FF ~~14-09-29~~

Bracket

Location

Loc Qty

Loc Code

WA002

33

104629

32

86921

1

M304TR0.875W.065

Purchased

No

160 f 34.0000 1.8542 4

M304TR0 875W 065

304 round tube .875 x .065w

Location

Loc Qty

Loc Code

MAT017

34

122541

14

m128118

20

m 129466

44

DAS
44
9-89

14/06/23

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

| | | | | | | | | | | | | | | | | | | |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/> | AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | |
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | |

| Root Cause | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design | | | | | | | | | |
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Handling/Pre | | | | | | | | | |
| Material | | | | | | | | | |
| Operator | | | | | | | | | |
| Offset/Setup | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Transport | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| | | | |
|--|--|---|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |
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SHOP COPY

RETURN TO

ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

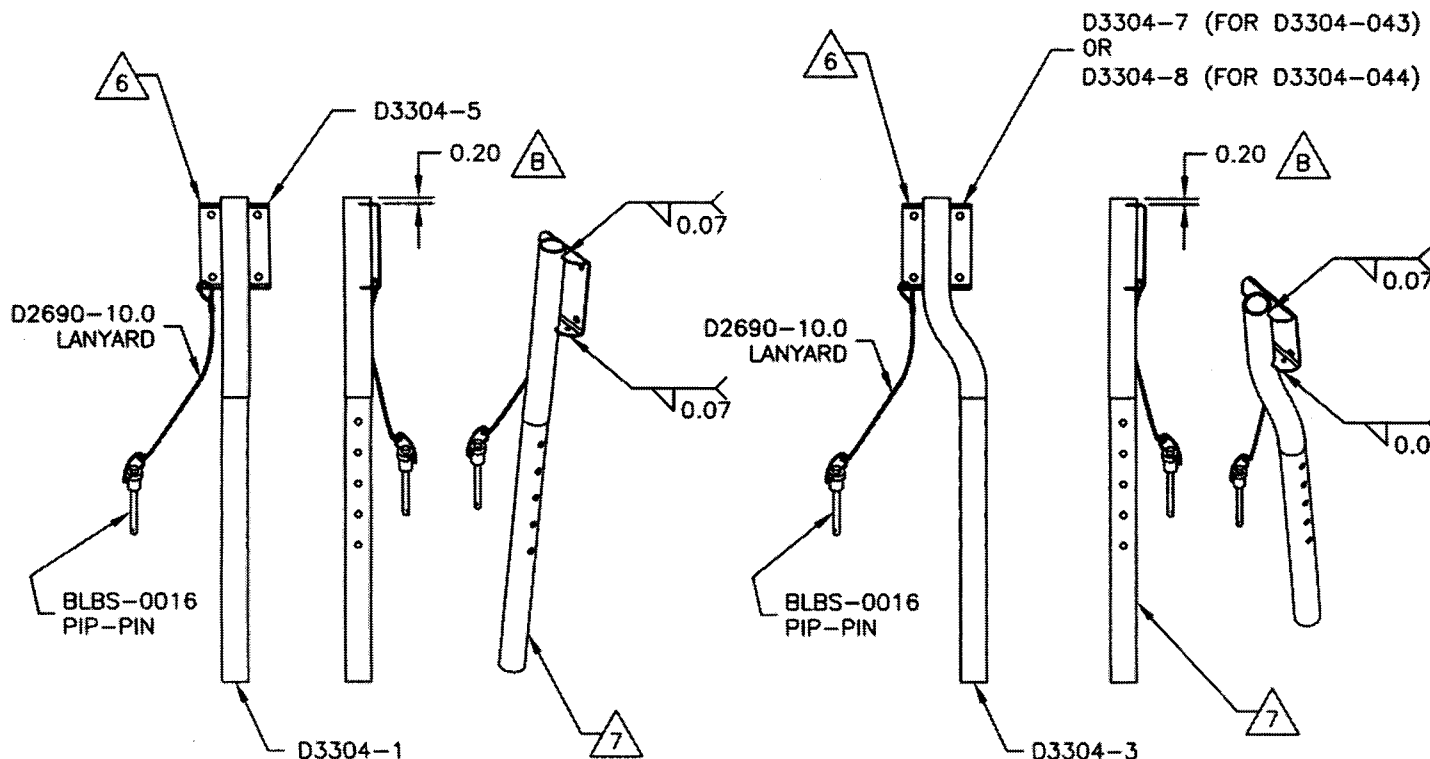
NO. 120114

MCS

14-06-05

DART

| DESIGN | RF | DRAWN BY | RF | DART AEROSPACE LTD |
|---------|--------------------|----------|--------------------|-----------------------------------|
| CHECKED | <i>[Signature]</i> | APPROVED | <i>[Signature]</i> | HAWKESBURY, ONTARIO, CANADA |
| DATE | 05.07.15 | | | REV. B |
| | | | | DRAWING NO. D3304 |
| | | | | SHEET 1 OF 4 |
| | | | | SCALE 1:6 |
| | | | | TITLE TUBE ASSEMBLY |
| | | | | DATE 04.08.18 |
| | | | | NEW ISSUE |
| | | | | UPDATE DIMENSIONS: ADD D3304-7/-8 |



D3304-041 TUBE ASSEMBLY

**D3304-044 TUBE ASSEMBLY (SHOWN)
D3304-043 OPPOSITE**

D3304-041/-043/-044 NOTES:

- 1) FINISH: POWDER COAT GREY SANDTEX (REF. 4.3.5.6) PER DART QSI 005 4.3
- 2) WELD PER DART QSI 004
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) IDENTIFY AS INDICATED USING FINE POINT PERMANENT INK MARKER "TCCA-PDA, DART AEROSPACE LTD, P/N D3304-XXX B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA04-11"
- 7) IF BEING ASSEMBLED WITH D3303-041, ADD THE FOLLOWING USING A FINE POINT PERMANENT INK MARKER: "TCCA-PDA, DART AEROSPACE LTD, P/N D412-724-XXX B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA04-11"

RELEASED
05.08.11

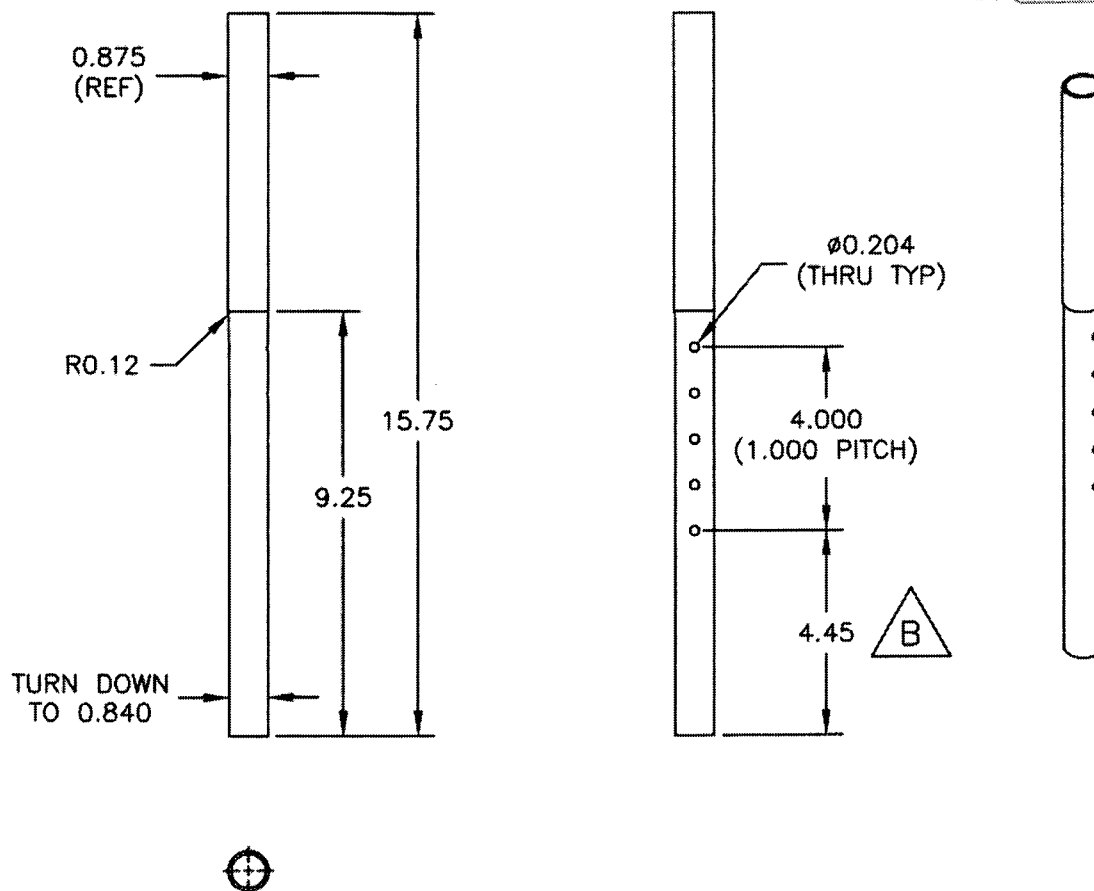
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| | | | |
|------------------|----------------|---|------------------------|
| DESIGN RF | DRAWN BY RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | APPROVED | DRAWING NO. D3304 | REV. B SHEET 2 OF 4 |
| DATE 05.07.15 | | TITLE TUBE ASSEMBLY | SCALE 1:4 |

RELEASED
05.08.11



D3304-1 TUBE

D3304-1 NOTES:

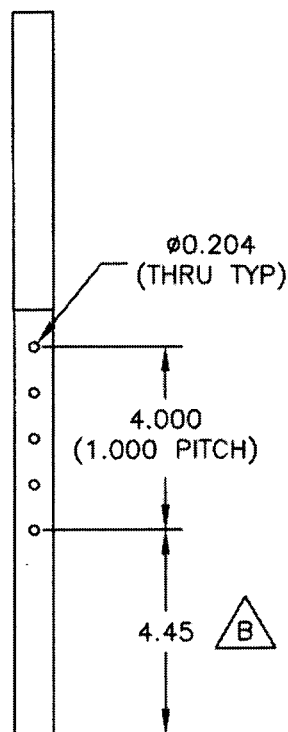
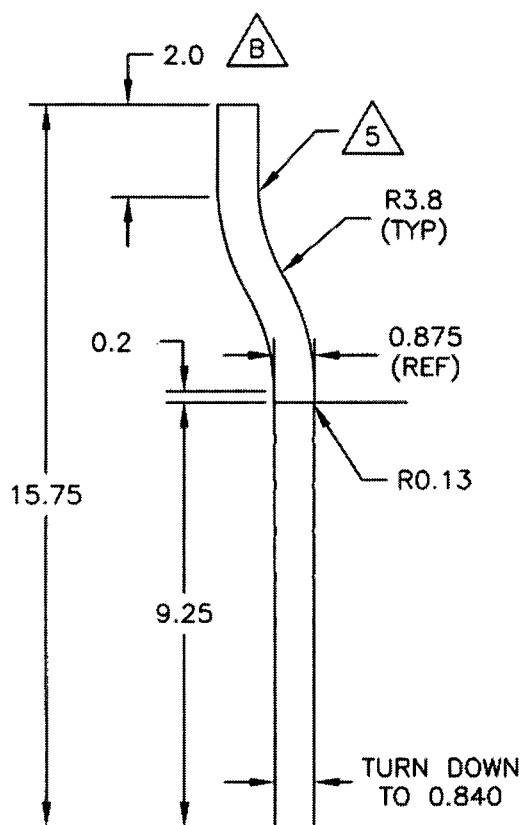
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE $\phi 0.875 \times 0.065$ WALL
(REF. DART SPEC M304TRO.875W.065) ENSURE SEAMLESS TUBE IS USED
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015

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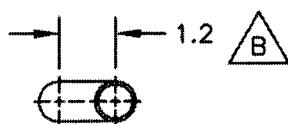
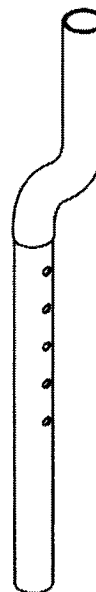
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| | | | |
|-------------------------------|--------------------------------|---|------------------------|
| DESIGN RF | DRAWN BY RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DRAWING NO. D3304 | REV. B SHEET 3 OF 4 |
| DATE 05.07.15 | | TITLE TUBE ASSEMBLY | SCALE 1:4 |



RELEASED
05-08-11 *[Signature]*



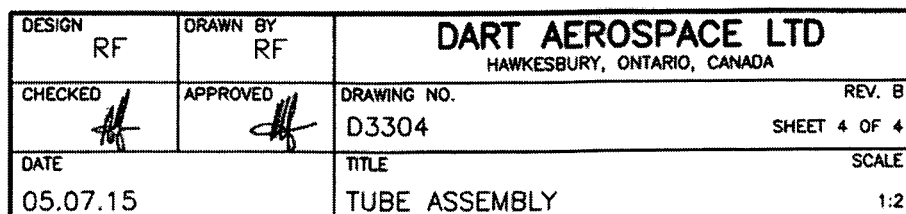
D3304-3 TUBE

D3304-3 NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE $\phi 0.875 \times 0.065$ WALL
(REF. DART SPEC M304TRO.875W.065) ENSURE SEAMLESS TUBE IS USED
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) BEND LINES 9.625, 13.375 DIMENSIONS

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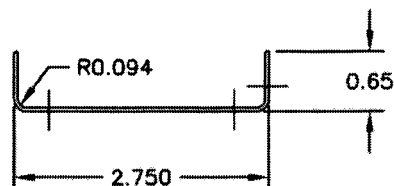
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D3304-5 FLAT PATTERN



D3304-7/-8 FLAT PATTERN



D3304-5/-7 BRACKET
D3304-8 OPPOSITE

NOTES:

- 1) MATERIAL: AISI 304/316 SS 0.040 THICK SHEET (REF. DART SPEC M304S20GA)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015

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